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A NEW *COLIAS* FROM SOUTH DAKOTA (LEPIDOPTERA: PIERIDAE)

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Some time ago Mr. Emil Krauth of Hebron, North Dakota, while collecting in the Black Hills of South Dakota, took an excellent series of a very distinct, undescribed subspecies of *Colias christina* Edwards. Knowing that I was engaged in a study of the butterflies of this genus, Mr. Krauth very kindly gave me his entire series of the form. It seems advisable to name it without further delay, as my revision of the genus will probably not be completed for some years to come.

Colias christina krauthii, new subspecies

This is a geographic race of *Colias christina* Edwards, apparently endemic to the Black Hills of South Dakota, which differs from the typical subspecies *christina* in the following particulars:

MALE.—Wings above: ground color darker, deeper orange; black discocellular spot of primaries always well developed and distinct, averaging slightly larger; orange discal spot of secondaries slightly less prominent. Wings beneath: ground color of costa, apex, and outer margin of primaries, and entire area of secondaries, decidedly grayish green (in typical *christina* these areas, with the occasional exception of the anal angle of the primaries, are definitely orange or orange yellow); discal area of primaries more consistently dusted with black or fuscous scales; discal spot of secondaries much less prominent due to the fact that its encircling ring is of a very light, washed-out pink (in typical *christina* this is of a much darker pinkish-brown or reddish brown, and is often much wider); entire area of secondaries on the average more heavily dusted with fuscous scales.

FEMALE.—Wings above: ground color lighter than in males but definitely orange in all specimens seen (in *christina* a large proportion of the females are yellow or white); dark borders consistently present, wider than in *christina*, with the included light spots yellow or orange yellow (in one specimen only they are orange as in the ground color); discocellular spot of primaries averaging larger and more conspicuous. Wings beneath: differences as in males, but even more conspicuous; in some specimens the areas described as "grayish green" in the males are of a peculiar grayish white with a faint greenish-yellow tint, totally different from anything I have ever seen in typical *christina*.

TYPES.—Male holotype, allotype, and thirty-one male and seven female paratypes, from twelve miles west of Custer, Black Hills, South Dakota, June 29, 1933; four male paratypes, vicinity of Custer, South Dakota, June 27, 1933, and five male

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and six female paratypes, Black Hills, South Dakota, July 1, 1931, all collected by Emil Krauth.

Holotype, allotype, and twelve male and five female paratypes are in The American Museum of Natural History; the remainder are in the author's collection.

C. c. krauthii has been compared with a large series of *christina* from southern and central Manitoba, Saskatchewan and Alberta. The only specimens with which it might possibly be confused are a few from a series from Laggan and End Mt. near Exshaw, Alberta, which, because of the possession of considerable greenish-fuscous suffusion on the secondaries beneath, likewise differ from the typical form of *christina*.

No yellow forms such as *astraea* and *emilia* were in this material; it is probable that they do not occur in the Black Hills.